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INTERIM REPORT

A MASTER PLAN FOR POST-SECONDARY NON-UNIVERSITY EDUCATION IN ALBERTA

Prepared By

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ALBERTA COLLEGES COMMISSION

April, 1972

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INTRODUCTION

The Alberta Colleges Commission Master Planning Project, which began early in 1971 is scheduled for completion by September, 1972. Data on a wide range of issues relative to the post-secondary non-university sector have been collected and analysed. Documentation of research has been provided in the form of Master Planning Monographs--five of which have been completed to date.

Monographs #6 to #10 are being developed and will be available on the dates indicated:

Master Planning Monograph #6 - May, 1972

Population Analysis: Alberta and Regional Population
Parameters for Educational Projection and Planning.

Master Planning Monograph #7 - May, 1972

Student Needs and Motivations: A detailed study of the
needs and motivations of students currently enrolled in
sixteen educational institutions in Alberta.

Master Planning Monograph #8 - May, 1972

A Cost Analysis of Alberta Public Colleges.

Master Planning Monograph #9 - May, 1972

Social Values and Educational Needs.

Master Planning Monograph #10 - June, 1972

A Survey of Existing Capital Facilities in Alberta
Post-Secondary Non-University Institutions.

In order that the project could be completed within the specified time frame, it was necessary to circumvent the extensive use of working committees. To date we have used an ad hoc Futures Committee for vetting purposes only and will continue to use this committee as a sounding board for our recommendations. However, before recommendations are implemented, it will be necessary to carry on extensive discussions with the institutions

concerned to ensure that a plan is not imposed upon them without due consultation as to the merits and implications of its recommendations.

The following flow chart indicates the scope of the Master Planning Project and suggests the types of committees which might be used as reactor panels to the master plan. Full documentation of the planning project is provided in Master Planning Monograph #1.

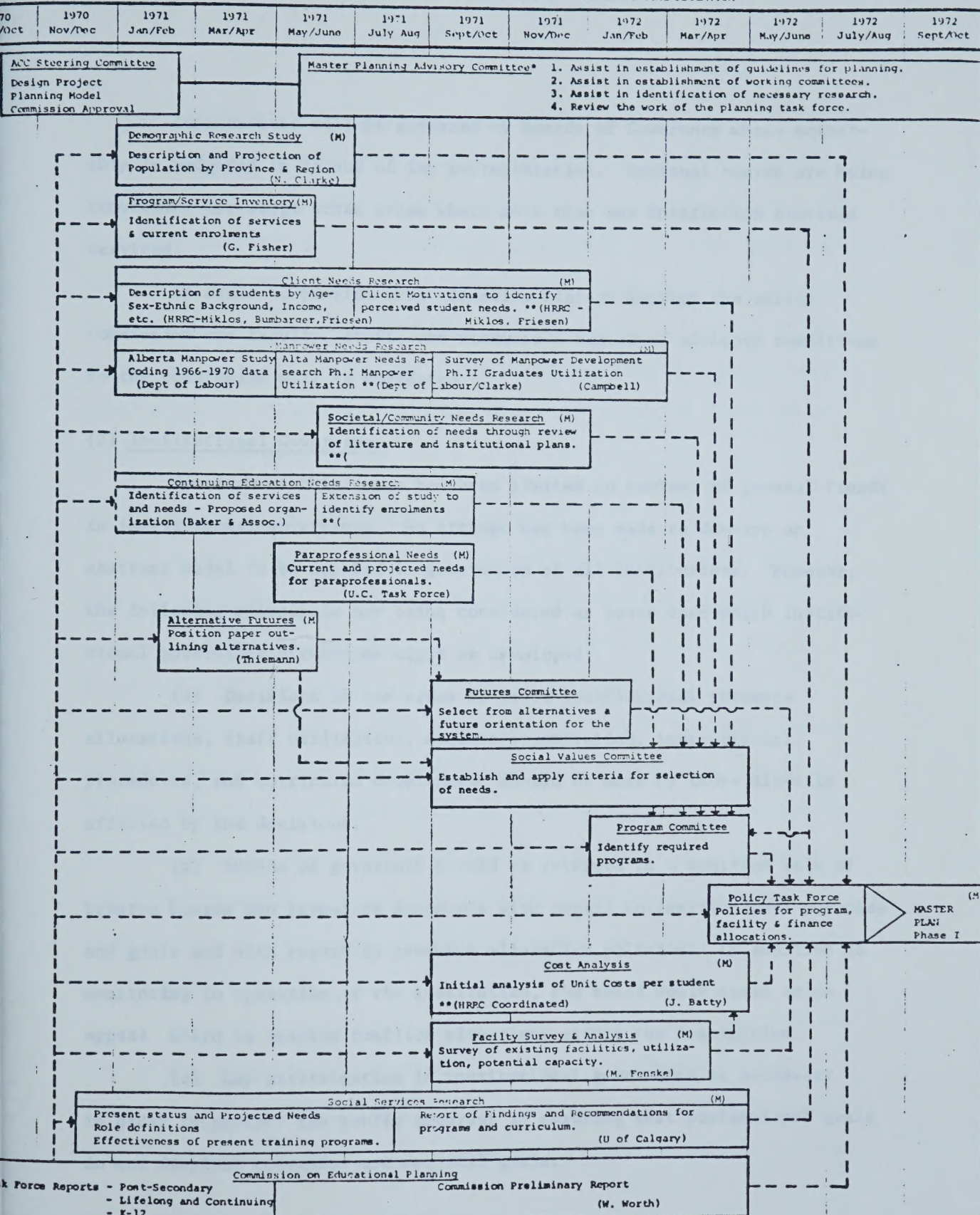
It should be noted that this report does not deal with all of the issues which will be included in the final report. It deals only with those issues and suggestions which have been presented to the Commission for their reaction.

DIRECTIONS AND RECOMMENDATIONS

(1) Governance and Coordination

Research on this issue has been completed and is documented in Master Planning Monographs No.'s 2 and 5. Consideration of current problems in coordination and a review of developments in the United States have led to the conclusion that voluntary coordinating agencies or councils generally fail to function effectively as coordinating structures.

Recommendations are being developed for the inclusion of all post-secondary non-university public institutions under the jurisdiction of the Alberta Colleges Commission for the short term, and for the long term development of a single coordinating policy-planning commission to replace the two existing commissions. A Department of Advanced Education will be recommended to perform the executive functions associated with system coordination.



(M) - Monograph expected for publication.

* Flow of reports to the Advisory Committee will occur with each monograph. Policy Committee reports will be submitted to Advisory Committee for review.

** Studies proposed but not formally commissioned.

Institutions will be governed by Boards of Governors whose membership is weighted in favour of lay representation. Regional boards are being considered for large urban areas where more than one institution provides services.

In order to provide more effective liaison between the policy commission and faculty, staff, and students a number of advisory committees to the commission will be suggested.

(2) Institutional Governance

Research on this issue has been limited to reviews of general trends in institutional governance. No attempt has been made to develop an abstract model to be applied in governance of all institutions. However, the following principals are being considered as bases upon which institutional governance structures might be developed:

(a) Decisions in the areas of intra-institutional resource allocations, staff utilization, student organization, instructional procedures, and curriculum development should be made by those directly affected by the decisions.

(b) Boards of governors should be retained in a modified role of trustee boards who formulate decisions with regard to institutional purposes and goals and with regard to resource allocation policies. In addition to monitoring to operation of the institution, the board would serve as an appeal board to resolve conflict situations within the institution.

(c) Lay participation in institutional governance is necessary in order to protect the public interest in ensuring that professional goals do not displace community and societal goals.

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(3) Board of Governors-Faculty Relationships

Several alternatives are being considered relative to employment of faculty. It has been observed for example that contractual agreements in some cases severely limit institutional flexibility. In order to ensure the institution's capability to adapt to new needs, suggestions will be made for contracts for services negotiated on an individual faculty basis, or for a provincial fee-for-service scale or for a minimum service contract which permits faculty to provide such additional services as are requested on a fee schedule basis.

(4) Population Growth and Projected Enrolment

Extensive research has been completed and documented in Master Planning Monograph #4. Additional analyses are currently underway to develop enrolment projections for each sub-system and for each public college. These will be documented in Master Planning Monograph #6.

Initial analyses indicated that enrolment rates in post-secondary institutions vary widely from over 20 percent of the 18-24 age group in Calgary, Edmonton, and Lethbridge census divisions to under 10 percent in the Fort McMurray, Edson, and Peace River census divisions. The average provincial enrolment ratio was calculated as 19.34 percent for Alberta or 21.85 percent if non-Alberta residents attending post-secondary institutions are included.

Analyses of the Alberta population by single year of age indicate that we are presently only one-half way through the 1960-1980 surge of young people reaching post-secondary entrance age. Our analyses suggest that the apparent levelling off of enrolments during the 1969-1971 intake

period may be attributed to the fact that there was little change in the number of 18 year olds during this period. However, if there is a direct relationship between the number of 18 year olds and enrolments, an increase in enrolments may be expected in 1972 and in subsequent years to 1979. (Table 1).

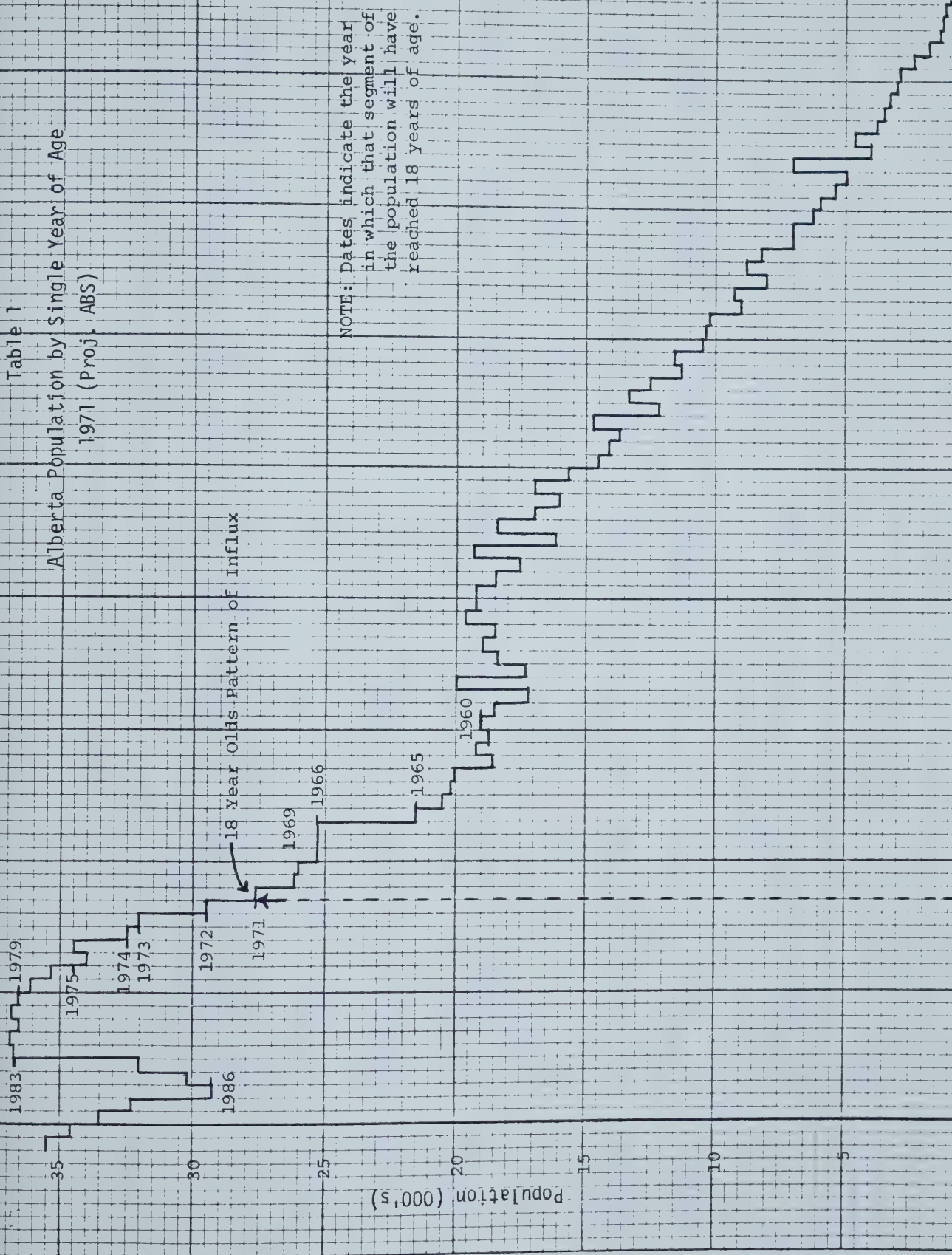
Analyses of the Alberta population by selected age groups also indicate a possible enrolment increase. While the total population is projected to grow at the rate of 1.9 percent or 38,000 people per year, a significant shift in age group distribution is evident. The 18-24 age group which presently forms 11.8 percent of the total population is expected to form 13.1 percent of the population by 1981. The 25-39 age group which presently forms 18.6 percent of the total population will also increase as a proportion of the total population to form 20.9 percent by 1981. Thus the age groups normally served by post-secondary institutions are projected to increase at a greater rate than is the total population. (Table 2).

It should also be noted that 1971 census data suggest that our projections may be somewhat conservative. The following comparison highlights the difference between projected and actual figures:

Total population for 1971 projected by ABS:	1,581,116
Total population for 1971 projected by OGCB:	1,622,916
Actual Total population by 1971 Census:	1,627,874

Table 1

Alberta Population by Single Year of Age
1971 (Proj. ABS)



NOTE: Dates indicate the year in which that segment of the population will have reached 18 years of age.

Table 2

Alberta Population by Selected Age Groups and Sex
1971 - 2001

Age Group	Name ¹	1971		1976		1981		1986		1991		1996		2001	
		Population % Males	% of Total	Population % Males	% of Total	Population % Males	% of Total	Population % Males	% of Total	Population % Males	% of Total	Population % Males	% of Total	Population % Males	% of Total
0-5	Early Childhood	199,702 50.7	12.4	237,465 50.7	13.3	279,545 50.8	14.1	316,395 50.8	14.4	335,734 50.9	13.8	353,775 50.8	13.2	387,268 50.8	13.2
6-17	Education	426,266 51.0	26.5	422,435 50.7	23.7	433,700 50.7	21.9	499,977 51.0	22.7	578,465 50.6	23.8	641,685 50.6	24.0	684,338 50.7	23.4
18-24	Higher Ed.-Work	189,114 50.0	11.8	231,002 51.1	13.0	259,369 50.7	13.1	244,195 50.9	11.1	252,971 50.1	10.4	298,347 50.5	11.2	346,530 50.4	11.8
25-39	Work-Cont. Ed.	298,362 49.6	18.6	342,169 49.9	19.2	413,737 50.9	20.9	494,744 50.5	22.4	542,422 50.8	22.3	556,500 50.3	20.8	578,927 50.2	19.8
40-59	Work-Cont. Ed.	326,660 51.6	20.3	354,576 51.3	20.0	374,272 49.4	18.9	396,761 48.7	18.0	440,680 49.6	18.1	511,319 50.6	19.2	601,846 50.3	20.6
60+	Work-Retire	168,256 51.1	10.5	192,200 49.8	10.8	220,212 49.0	11.1	252,530 48.4	11.5	284,392 49.7	11.7	309,727 49.4	11.6	328,815 47.6	11.2
TOTAL*		1,608,335 50.7	100.0	1,779,814 50.4	100.0	1,980,806 50.3	100.0	2,204,578 50.0	100.0	2,434,632 49.9	100.0	2,671,320 49.7	100.0	2,927,687 49.8	100.0

Source: A.B.S. detailed computer print outs of "high more likely (net in-migration = 5000 per year) projections," 1967-2001.

*Errors due to rounding of fractional number of persons generated in calculating projection.

¹Clarification suggested by N. Chamchuk, Alberta Colleges Commission.

Enrolment projections have been prepared to accommodate several alternative policy decisions:

Alternative (1): Maintain 1971 enrolment ratios without taking into account equalization in terms of geographic accessibility or establishment of new institutions and services.

Alternative (2): Stabilize enrolments in universities and agricultural and vocational colleges and assume that technical institutes will grow proportionately with the 18-24 group. Colleges will be assigned the residual participants assuming continued geographic variation in enrolment rates.

Alternative (3): Stabilize enrolment in universities and agricultural and vocational colleges and assume a 10 percent increase in enrolments at the technical institutes. College enrolments will be adjusted to equalize enrolment ratios in each geographic region.

Alternative (4): Maintain the 1971 enrolment ratios and hold the residual pool of non-participants at 150,000 with colleges and technical institutes providing the additional places required.

While each of the projections resulting from adopting one of the above policy alternatives may be acceptable to one or more subsystems, Alternative (1) with some adjustments to take into account new institutions

and increased equalization among geographic regions is likely most realistic and acceptable.

Recommendations regarding enrolment projections are being framed to take the following factors into account:

1. Enrolment ratios in low ratio areas likely will increase.
2. Public colleges and technical institutes increasingly will become viable alternatives to universities and will therefore show higher growth increases.
3. Agricultural and vocational colleges will not experience substantial enrolment increases.
4. University enrolments will continue to grow but at a lower rate as public colleges continue to attract more students in public service types of programs such as health services, fire and police sciences and recreation services.
5. Substantial population growth may be expected in the Grande Prairie region and in the Fort McMurray region as a result of industrial development.
6. Colleges in large urban centers will realize significant enrolment increases (in absolute numbers).
7. Shifts in program priorities will result in enrolment changes.

Table 3 summarizes ranges of full-time enrolment projections. Enrolment objectives will be recommended within these ranges. These objectives will be designed to utilize existing facilities wherever possible.

Table 3

Enrolment Projection Ranges, 1972 - 1985, Selected Years
(in thousands)

Year	Total		University		Ag.-Voc.		Technical		College	
	Low	High	Low	High	Low	High	Low	High	Low	High
1971-72	42.2		29.0		0.6		6.4		6.1	
1972-73	44.8 - 49.6		29.0 - 30.8		0.6 - 0.7		6.8 - 7.7		6.4 - 13.6	
1973-74	47.2 - 52.3		29.0 - 32.4		0.6 - 0.7		7.3 - 8.6		6.8 - 15.1	
1974-75	49.7 - 55.2		29.0 - 34.2		0.6 - 0.7		7.7 - 9.4		7.2 - 16.5	
1975	51.0 - 58.2		29.0 - 36.0		0.6 - 0.8		8.2 - 10.4		7.5 - 17.4	
1980	52.4 - 65.7		30.0 - 37.3		0.6 - 0.9		8.4 - 11.8		7.8 - 15.7	
1985	49.3 - 65.0		28.0 - 37.0		0.6 - 0.9		8.0 - 11.6		7.3 - 15.5	

NOTE: The sum of low enrolments is less than the Low Total.
The sum of high enrolments is more than the High Total.

(5) System Resource Allocations

Research on this issue is continuing and will be documented in part in Master Planning Monograph #8 which will report the findings of a cost analysis of the six public colleges. A proposed cost analysis of the total system including universities and technical institutes was shelved with the dissolution of the Human Resources Research Council. However, gross unit costs for cost-projection purposes will be calculated using total operating expenditures and enrolment figures for 1970-71 and 1971-72. The resulting unit costs will be related to population projections to provide estimates of costs of accommodating increased enrolments.

Capital cost estimates will be calculated following completion of a survey of existing facilities in the province. Capital development may be anticipated for the Grande Prairie, Fort McMurray, Edmonton, and Calgary regions. However, the extent of such development will depend upon the degree to which existing facilities may be utilized. For example, the agricultural and vocational colleges as well as some composite high schools could be utilized to provide post-secondary programs.

Recommendations are being developed relative to the finance issue to suggest a 2 to 3 year cyclical budget period for operating finance based on enrolment objectives. Allocations to institutions will be recommended on a budget approval basis but will retain a direct relationship to actual enrolments in order to ensure a measure of productivity. Recommendations regarding requests to government for operating finance will suggest that such requests clearly delineate operating costs for maintenance of existing services and marginal costs of providing additional services. Institutional

budgets as well as commission requests to government should be ordered in terms of program priorities.

Capital support for new construction will likely require adjustment to take into account increased construction costs. Specific recommendations regarding capital development will be framed following completion of the facilities survey.

(6) Institutional Resource Allocations

Although intra-institutional resource allocation decisions properly fall within the jurisdiction of institutional governing boards, it was recognized that governing boards may be "boxed in" by the implications of certain decisions. Furthermore, the increasing student demand for college education combined with rising costs has intensified the need for information that will aid the institution in making resource allocation decisions.

It was decided therefore to implement a simulation model as a pilot project in one college with a view towards developing a model which could be adopted by all post-secondary institutions as a management tool. The model selected for development was designed by the Western Interstate Commission for Higher Education (WICHE) as an analytic model to aid decision makers in evaluating current operations and in analysing future resource allocations.

The model, known as RRPM 1.3 (Resource Requirements Prediction Model Version 1.3), will be piloted in Lethbridge Community College with consultant services contracted through the University of Alberta. Computer services will be provided by NAIT. Implementation and adaptation costs up to \$10,000 will be borne by the Master Planning Project.

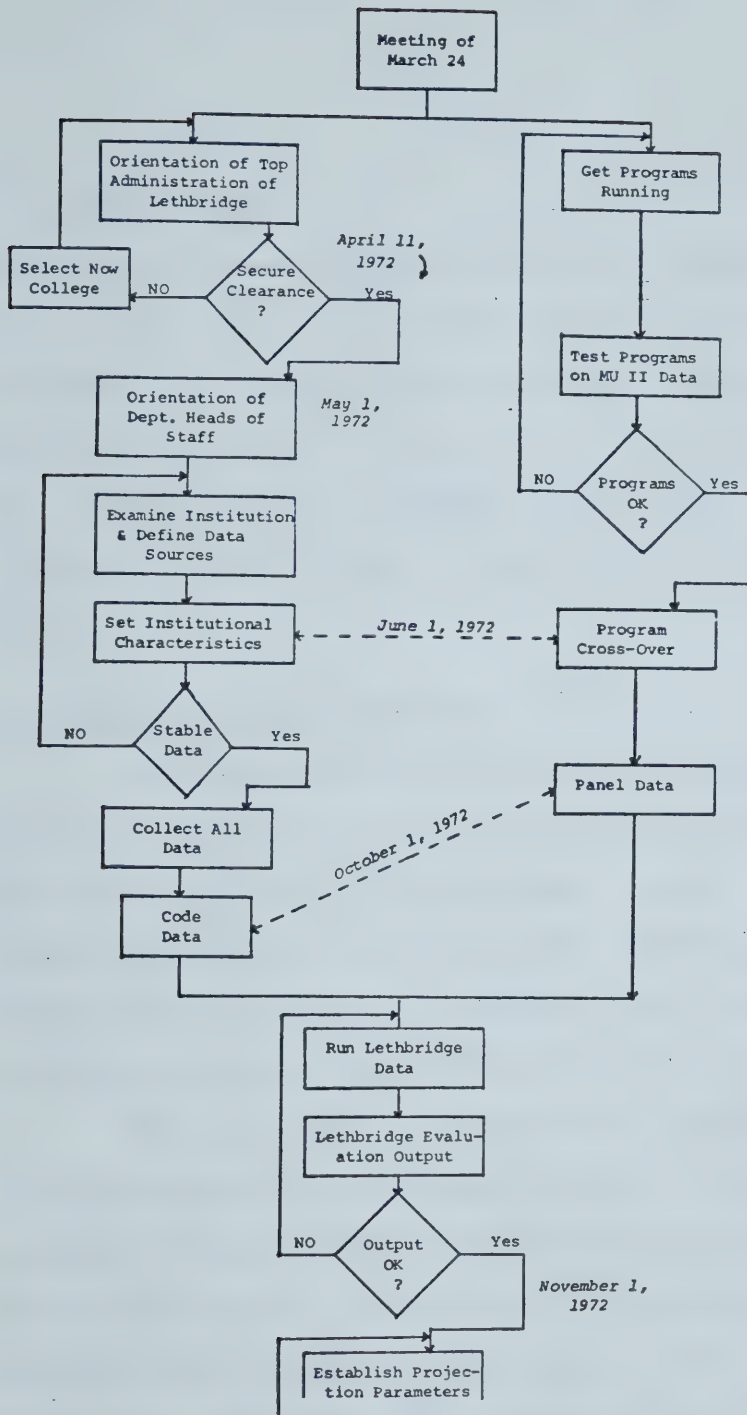
RRPM 1.3 is an enrolment driven model based on the premise that once current program costs and outputs are known, the effects of future operational decisions can be tested.

Much of the information required for the model is already being collected. What remains is to organize the information into a format acceptable to the model and to further adapt the model to an Alberta college.

Recommendations are being developed to suggest that pending the successful implementation of the RRP Model as a management tool in Lethbridge Community College, it or a similar model be adopted for use by all post-secondary non-university institutions.

Several advantages will accrue from implementing this recommendation:

1. Interinstitutionally comparable cost data will be available.
2. A standardized accounting procedure will be possible in all institutions, or an accounting cross-over system will be developed to translate institutional accounting data to standard cost centers.
3. Institutions will be able to predict the effects of allocative decisions.
4. Institutional costs may be related to output indicators and output measures.
5. Program budgeting will be facilitated.



The Project is envisioned as consisting of TWO parallel sets of Activities. These activities are related to the work of the University of Alberta (Department of Educational Administration) and NAIT but are not exclusive. Each set of activities will involve the human and informational resources of Lethbridge.

(7) Student Finance

Our review of student enrolments and accessibility has suggested that student finance should form an integral part of the coordinating agency functions. If the agency is to promote the concept of equalizing access to educational opportunity, student finance is perhaps the most viable means for achieving this end. Recommendations will be developed to suggest the inclusion of student finance as one of the functions of the coordinating agency.

(8) Student Needs and Motivations

An extensive study of the needs and motivations of students currently enrolled in sixteen post-secondary non-university institutions will be completed in draft form by April 30, 1972. The initial data collection and analysis was completed by HRRC. However, with the phasing out of HRRC, it has been necessary to negotiate a new contract with Dr. J. McLeish of the University of Alberta to complete the analysis and prepare the report.

Findings of this study suggest that the majority of students (83 percent) are satisfied with their institution, with their program of study, and with the organization of instructional programs. In ranking "colleges" on this variable, Dr. McLeish noted that AVC, Edmonton and Olds Agricultural and Vocational College rank highest while Fairview and Vermilion Colleges rank lowest. The twelve other institutions clustered around the mid-point of the ranking scale.

The study will provide information on issues such as student governance, communications, and accessibility as well as on the general needs and motivations of students in each institution.

Following completion of the study, recommendations will be developed relative to each of the above issues.

(9) Manpower Needs

The necessity for developing estimates of manpower needs was apparent during the initial stages of the planning project and immediate action was taken to assemble all available data on manpower needs. It was found that much of the research in this area has been conducted to fulfill the needs of a specific user. Comparable data on which to base projections was not available.

A Manpower Planning Consortium was then organized through the Human Resources Research Council. The Council agreed to assemble all available data, prepare quantitative listings, and identify research and information gaps. The Consortium would function as a vehicle for identifying common manpower research needs and thereby would avoid duplication of research efforts.

Following the announcement that the HRRC would be phased out, contact was made with the Department of Labour with a view to developing a coordinated and continuing manpower planning capability for the province. Recently the Department of Labour has indicated that it is proceeding with development of a manpower planning capability.

A long-range manpower development study is being conducted by D. L. Campbell under the joint sponsorship of the Departments of Labour and Advanced Education. Phase 1, which is now complete, will provide a quantitative output measure from our institutions. This will constitute a part of the manpower "supply" dimension.

As an interim measure, we will review all available manpower projections and identify trends for future development. Hopefully our efforts will provide additional directions for program development, priority employment programs, and manpower development policies.

(10) Institutional Roles and Program Allocations

The post-secondary educational system has tended to operate in a relatively uncoordinated manner with each sub-system and each institution proceeding independently. This has resulted in a number of jurisdictional and service overlaps.

In order to provide for the orderly growth of the post-secondary system we are considering allocating a "scope and mission" to each sub-system. The following table identifies the general scope of services which might be allocated to each sub-system:

- (1) Universities - Undergraduate
- Degree
- Post Graduate
- Research

(2) Public Colleges (2 Year)

- University Transfer: Grande Prairie
- Red Deer
- Medicine Hat
- Vocational: All
- Technical (one year): Grande Prairie
- Lethbridge
- Para-professional: All
- Native Education: Lethbridge
- Mount Royal
- Grant MacEwan

(3) Technical Institutes (2-3 Year)

- Scientific Technologies
- College of Art: Calgary
- Applied Arts

- (4) Alberta Vocational Centres
 - Vocational
 - Academic upgrading
 - College Extension: Fort McMurray
- (5) Agricultural and Vocational Colleges
 - Certificate and Diploma: Olds (2 year)
 - Extension Programs in Agriculture: Fairview
Vermilion
 - Native Education: Fairview
Vermilion
 - Technical: Fairview
Grande Prairie
 - College Extension: Vermilion
- (6) Forest Technology School
 - Forestry
 - Resource Management
 - Environmental Education
 - Reclamation Science
 - College Extension

Among the "missions" which will be identified are the following:

- (a) Native education.
- (b) Education for the unemployed and disadvantaged.
- (c) Education for industrial and economic development.
- (d) Education for social services: aged, handicapped, leisure.
- (e) Extension services via the technologies, radio, T.V., etc.

Our current review of university transfer programs suggests that a moratorium might be declared on the development of second-year university transfer programs in colleges. Although our data are not yet complete, there is evidence to show that providing the second-year of transfer does not increase accessibility since the majority of students in these programs already hold university matriculation standing.

Furthermore, the breadth of course offerings at this level may

seriously restrict student choice. In addition, costs of providing this level of service may exceed the costs of providing the same services in universities.

An alternative to declaring a moratorium might be to require that no college may exceed a 50:50 ratio of university transfer to other program enrolments. This alternative would require that colleges expand other program areas at the same time as they expand the university transfer program.

(11) Transferability

Many of the discussions and negotiations which have been conducted over the past ten years appear to have been relatively fruitless in ensuring transferability without loss of credit. Instead, the affiliation agreements which have been negotiated have tended to drive colleges to emulate universities and have imposed a junior-senior relationship between colleges and universities.

The major argument in favor of affiliation agreements has been that these agreements ensure quality control of the college programs.

Our analysis of the situation suggests that the problem of transferability will not be resolved by either discussion or legislation. The master plan will recommend that all existing affiliation agreements be suspended for a two-year period during which time any student having completed a program in a post-secondary institution will be admissible to any university in the province upon the recommendation of the sending institution.

The ultimate test of the effectiveness of this proposal will be in the degree of success of transferring students. If it is found that sending institutions are unrealistic in their expectations, then the pilot project may be terminated and another solution sought.

(12) Program Development

This issue has been explored with colleges to determine the needs for future program development. The planning project will identify general program areas which should be developed in each region.

In addition, recommendations are being developed to suggest that the Commission support the establishment of a program planning and research capability in each college. Such planning and research "offices" will be required to assess regional manpower, client, and community needs and propose appropriate educational programs. Furthermore, such "offices" will be expected to develop institutional output measures and indicators and develop continuing follow-up procedures to determine the effectiveness of programs.

No change is anticipated in current program approval procedures. However, a central program registry will be recommended to ensure that institutions function within specified roles and to avoid unnecessary duplication of program development activities. Such a central registry would be a natural outgrowth of developing a single policy coordinating agency.

(13) Continuing Education

Continuing education and community outreach programs are viewed as essential services which should be provided as an integral part of post-secondary education. The following recommendations are proposed for inclusion in the final master planning report:

1. That the Commission support the development of regional councils to coordinate continuing education activities.
2. That regional councils prepare a listing of recommended continuing

education activities allocated for each institution.

3. That each institution decide the extent to which it will implement its allocated set of activities.

4. That institutions be discouraged from including continuing education assignments as a part of regular instructor's work loads.

5. That personnel for continuing education programs be employed on an hourly-rate basis.

6. That the Commission provide support for continuing education programs in the amount of \$4.00 per hour of instruction.

7. That the Commission reserve the right to post-audit institutional records.

8. That institutions maintain a record of each course or program offered. This record should include the following minimum data:

- (a) Nature and purpose of program.
- (b) Dates offered.
- (c) Enrolments (initial/completed).
- (d) Instructional cost.
- (e) Material cost.
- (f) Fee revenue.

(14) Planning

The need for a comparable and consistent data base for purposes of planning, role and service parameter allocations, and resource allocations has become increasingly evident throughout the master planning project. The master plan will recommend the development of such a data base along with the

development of a system simulation model with which to test the implications of policy decisions and specific resource allocations.

A number of specific recommendations have already evolved from the experience gained in conducting the planning project. These are listed below for information and will be included in the final master planning report:

1. That the Commission support the development of a policy coordinating Commission having system planning as a major function.

2. That the Commission support the development of a provincial information system designed to provide data relative to:

- (a) Participation by age, sex, region, culture, socio economic level.

- (b) Level of achievement.

- (c) Level of employment of graduates.

3. That the Commission support the development of a provincial manpower planning capability which will:

- (a) Identify manpower needs by occupation and by geographic region.

- (b) Identify trends in manpower development.

4. That the Commission extend the student motivations study to include potential students drawn from segments of the population which have not historically availed themselves of post-secondary education, eg. socially and economically disadvantaged, various ethnic groups.

5. That the Commission maintain a cyclical planning capability so that the adopted master plan is constantly revised on the basis of new and more specific information.

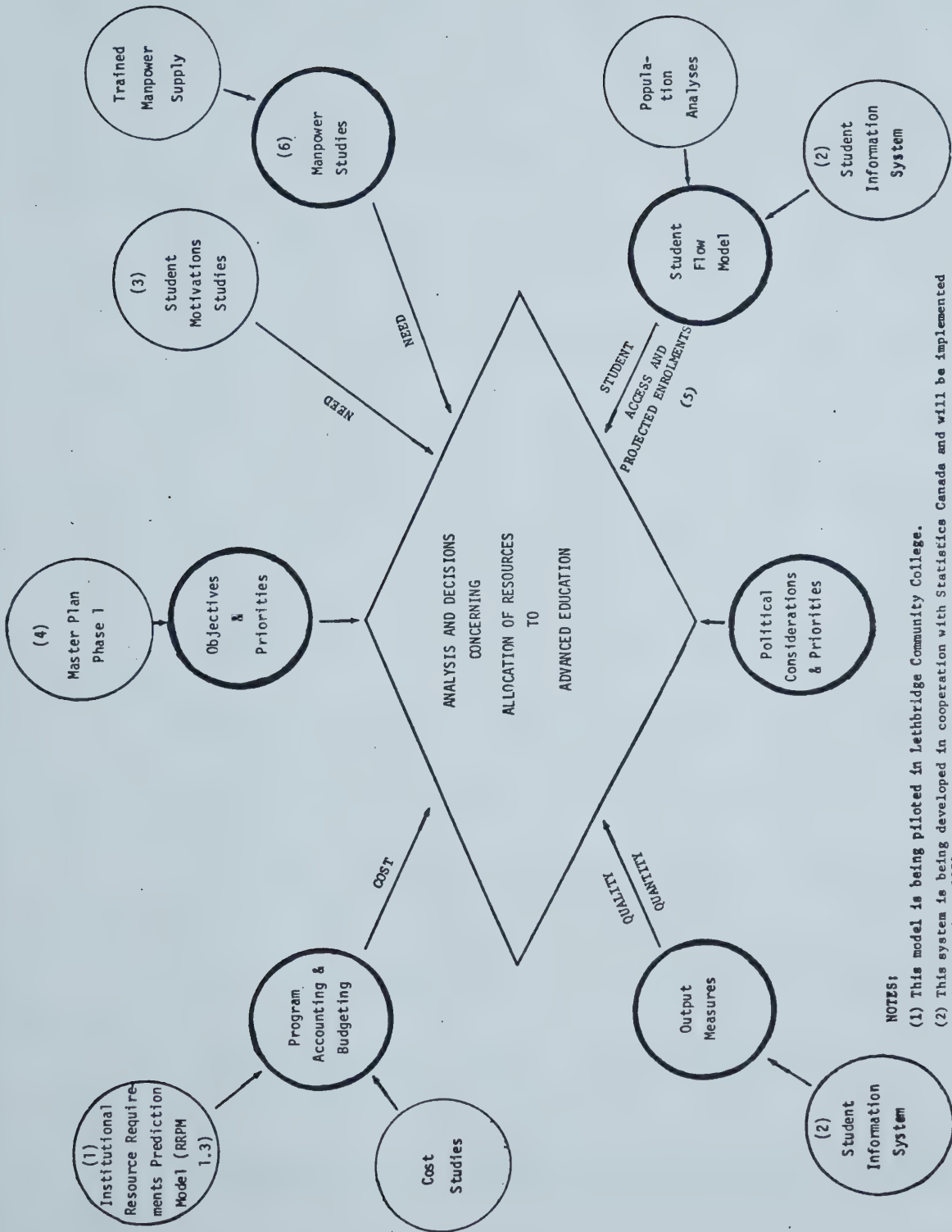
Adoption of the foregoing recommendations for system planning would create the "Provincial Planning Environment" described in the following diagram. It should be noted that all light circles represent studies and data collection procedures currently underway as a part of the master planning project.

(15) Priorities

One of the most difficult tasks encountered in planning relates to recommending priorities which will enable the coordinating agency to take appropriate action within the limits of available resources.

The following is a random listing of items and issues which are being considered and ordered as priorities:

1. Increase access to and availability of post-secondary educational opportunities to those who have been historically excluded by virtue of age, race, sex, economic or social status, or geographic location.
2. Development of excellence in instruction through the development of instructional processes which take into account a variety of cognitive styles of individuals and which ensure a high rate of success.
3. Expansion of programs related to meeting existing and emerging manpower needs.
4. Development of a system of non-terminal educational experiences ensuring students ready re-access at any point in time or process.
5. Development of a system for ensuring transferability to any level of education without unnecessary repetition.
6. Development of communication and counselling system which ensure



NOTES:

- (1) This model is being piloted in Lethbridge Community College.
- (2) This system is being developed in cooperation with Statistics Canada and will be implemented in September, 1972.
- (3) This study is currently underway and will be available on May 1, 1972.
- (4) Phase 1 of the Master Plan will be complete by September, 1972.
- (5) Initial enrolment projections will be included in Phase 1 of the Master Plan and will be monitored through the Student Information System.
- (6) These studies should be undertaken in cooperation with the Department of Labour.

that the population is aware both of the services being provided and of the job potential of programs being offered.

7. Development of a consistent and comparable data base for purposes of planning, role allocations, accessibility measures, resource allocations, and accountability.

8. Development of a needs assessment capability to identify manpower, client, and societal needs.

9. Development of a provincial cost-estimation capability as a basis for future resource allocations.

10. Utilization of existing facilities through development of provincial library and computer networks and through joint use of physical facilities where available, eg. public composite schools, agricultural and vocational colleges.

11. Development of sets of output indicators: real and proxy indicators.

12. Development of review procedures to ensure that programs are structured to meet specific goals and produce measurable and observable outputs wherever possible.

13. Development of non-institutionalized services which may be extended to students without residence requirements.

14. Support for developing institutions experiencing growth in enrolments.

15. Increasing productivity ratios of institutions within the system.

16. Implementation of institutional simulation models for management purposes.

